

CLAIMS

WHAT IS CLAIMED IS:

1. A light source, comprising:
5 an LED that emits excitation light;
a layer of phosphor material positioned to receive the excitation light, the
phosphor material emitting visible light when illuminated with the
excitation light; and
a non-planar flexible multilayer reflector that transmits the excitation light and
10 reflects visible light, the non-planar flexible multilayer reflector being
positioned between the LED and the layer of phosphor material.
2. The light source according to claim 1, wherein the non-planar flexible
multilayer reflector comprises polymeric material.
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3. The light source according to claim 1, wherein the non-planar flexible
multilayer reflector comprises alternating layers of a first and second thermoplastic
polymer and wherein at least some of the layers are birefringent.
- 20 4. The light source according to claim 1, wherein the excitation light comprises
UV light.
5. The light source according to claim 1, wherein the non-planar flexible
multilayer reflector is a concave polymeric multilayer reflector.
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6. The light source according to claim 1, wherein the non-planar flexible
multilayer reflector is a hemispherical concave polymeric multilayer reflector.

7. The light source according to claim 1, wherein the layer of phosphor material is disposed on the non-planar flexible multilayer reflector.
8. The light source according to claim 1, wherein the non-planar flexible multilayer reflector comprises a polymeric material that resists degradation when exposed to U.V. light.
9. The light source according to claim 2, wherein the non-planar polymeric multilayer reflector is a polymeric material substantially free of inorganic materials.
10. The light source according to claim 1, wherein the layer of phosphor material is a discontinuous layer of phosphor material.
11. The light source according to claim 1, wherein the layer of phosphor material is a plurality of dots of phosphor material.
12. The light source according to claim 11, wherein each dot has an area of less than 10000 microns².
13. The light source according to claim 11, wherein the plurality of dots comprise phosphor material that emit red, green and blue light when illuminated with excitation light.
14. The light source according to claim 11, wherein at least a first phosphor dot emits light at a first wavelength and a second phosphor dot emits light at a second wavelength different than the first wavelength.
15. A method of manufacturing a light source, comprising the steps of:
providing a LED that emits excitation light;

positioning a layer of phosphor material such that the phosphor material emits visible light when illuminated with the excitation light; and
positioning a non-planar flexible multilayer reflector that transmits the excitation light onto the phosphor material and reflects visible light.

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16. The method according to claim 15, wherein the positioning a non-planar flexible multilayer reflector further comprises shaping a flexible multilayer reflector to form a non-planar flexible multilayer reflector.

10 17. The method according to claim 15, further comprising thermoforming a polymeric multilayer reflector to form a non-planar flexible multilayer reflector.